



Northern Everglades Initiative Update
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Governing Board Workshop
October 10, 2007



Northern Everglades and Estuary Protection Act

- **Requires development of Phase II Technical Plan for Lake Okeechobee Watershed Construction Project**
 - **Due by February 1, 2008**
 - **Developed by South Florida Water Management District, in cooperation with the Florida Department of Environmental Protection and Florida Department of Agriculture and Consumer Services**

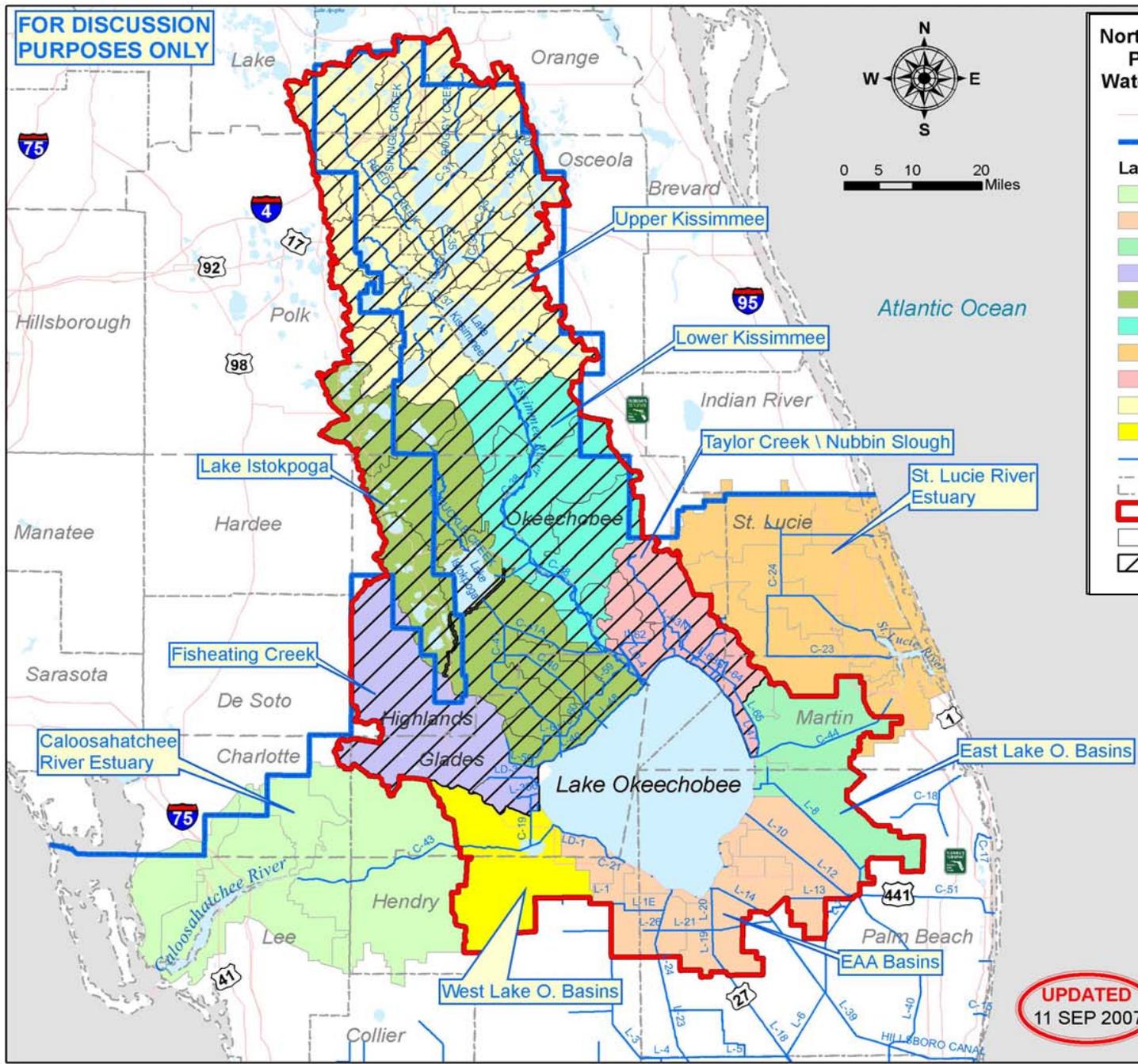
Northern Everglades and Estuary Protection Act

- **Technical Plan “shall include measures for the improvement of the quality, quantity, timing, and distribution of water in the northern Everglades ecosystem, including Lake Okeechobee watershed and the estuaries, and for facilitating the achievement of water quality standards.”**

Lake Okeechobee Technical Plan Requirements

- **Identify facilities to achieve TMDL**
 - **Size**
 - **Location**
 - **Schedule**
 - **Costs**
- **Provide additional measures to increase water storage and reduce excess water levels in lake and discharges to tide**
 - **Identify storage goal to achieve desired lake levels and inflow volumes to estuaries while meeting other water related needs**

**FOR DISCUSSION
PURPOSES ONLY**



**Northern Everglades Ecosystem
Phase II Lake Okeechobee
Watershed Construction Project**

- Roads
- SFWMD Northern Border
- Lake Okeechobee Watersheds**
- Caloosahatchee River
- EAA Basins
- East Lake O. Basins
- Fisheating Creek
- Lake Istokpoga
- Lower Kissimmee
- St. Lucie Estuary
- Taylor Creek/Nubbin Slough
- Upper Kissimmee
- West Lake O. Basins
- SFWMD Major Canals
- - - County Boundary
- LOPP Hydrologic Boundary
- Basins
- Regional Simulation Model - Sub Watersheds

This map is a conceptual tool utilized for project development only. This map is not self-executing or binding, and does not otherwise affect the interests of any persons including any vested rights or existing uses of real property and is not a survey.

**UPDATED
11 SEP 2007**



Evaluation of Alternatives

- **Water Quantity**
 - **Water Budget modeling**
 - **Modeling results evaluated using standard performance measures for Lake Okeechobee, estuaries, and water supply**
- **Water Quality**
 - **Spreadsheet evaluation of phosphorus reduction**
 - **Builds upon 2007 Lake Okeechobee Protection Plan update**
 - **Results compared to Lake Okeechobee phosphorus TMDL**



Alternatives 1, 2, 3 and 4



Alternative Formulation

- **Utilized combination of management measures to develop alternatives**
- **Evaluated 4 alternatives**
 - **Alternative 1- Common Elements (Existing or Planned Projects and Programs)**
 - **Alternative 2- Emphasis on Water Storage**
 - **Alternative 3- Emphasis on Water Quality**
 - **Alternative 4- Integrates Alternative 2 (Storage) and Alternative 3 (Quality)**

Alternative 1 Summary

- **Alternative 1 includes-**
 - **Level 1, 2, and 3 Management Measures**
 - **CERP Lake Okeechobee Watershed Project Tentatively Selected Plan features not in Levels 1-3**
 - **Kissimmee Reservoir**
 - **Istokpoga Reservoir**
 - **Istokpoga STA**

Alternatives 2, 3, and 4

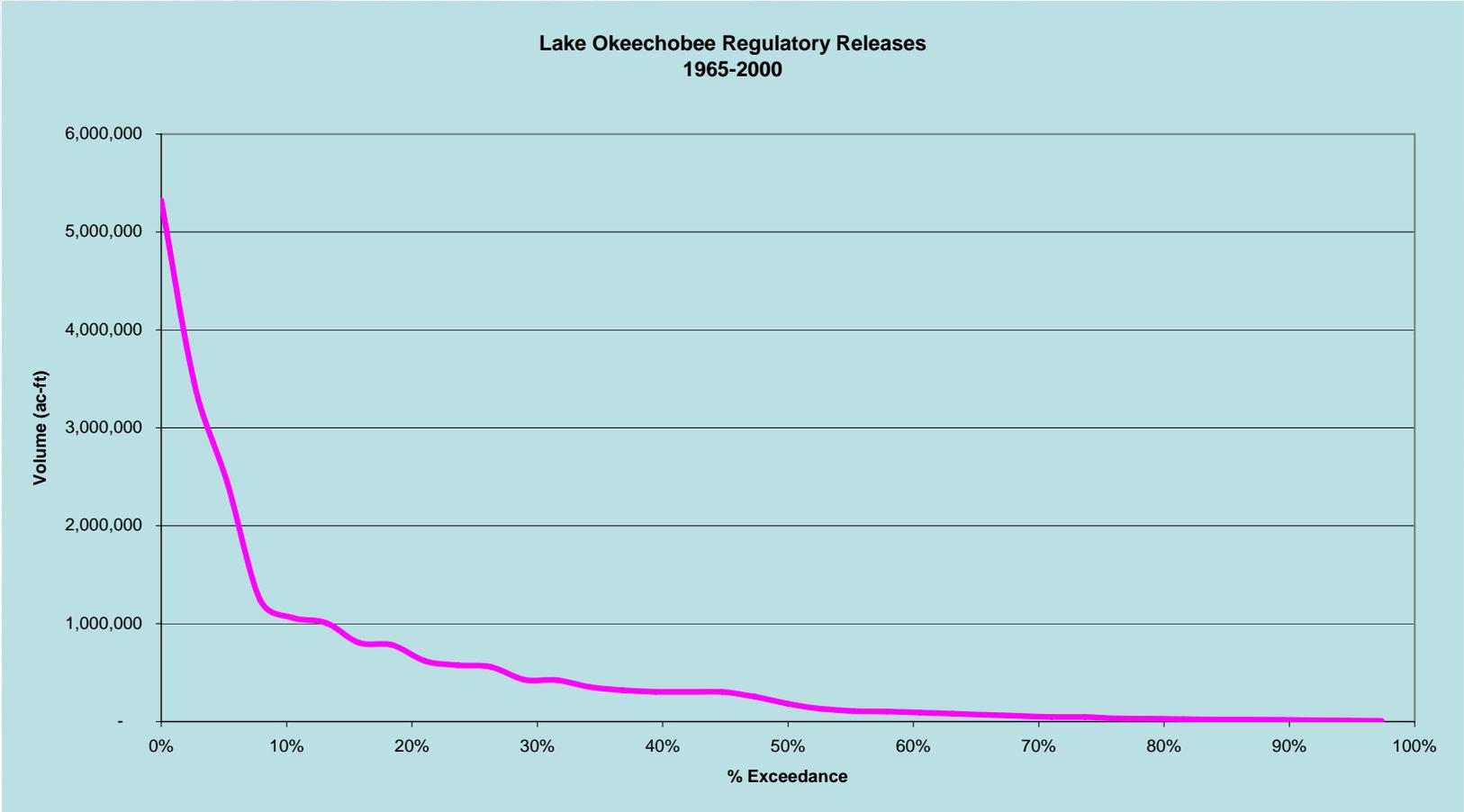
- **Alternatives 2 and 3 build upon Alternative 1**
- **Alternative 2**
 - **Focus on storage to meet Lake Okeechobee stage envelope and estuaries salinity envelopes**
 - **Additional storage in Lower Kissimmee, Lake Istokpoga and Fisheating Creek**
 - **~1.3 million acre feet of storage**
- **Alternative 3**
 - **Focus on meeting Lake Okeechobee Total Maximum Daily Load**
 - **Taylor Creek/Nubbin Slough- Deep Injection Well, S-133 Water Quality Treatment**
 - **Lake Istokpoga and Fisheating Creek- STAs, Reservoir assisted- STAs**
 - **EAA- STA adjacent to S-4**
- **Alternative 4**
 - **Integrates Alternative 2 and 3**



Alternative 1 - 4 Water Quantity Analysis

Defining the magnitude of the problem

Lake Okeechobee regulatory releases based upon Restudy 2050 Future Base

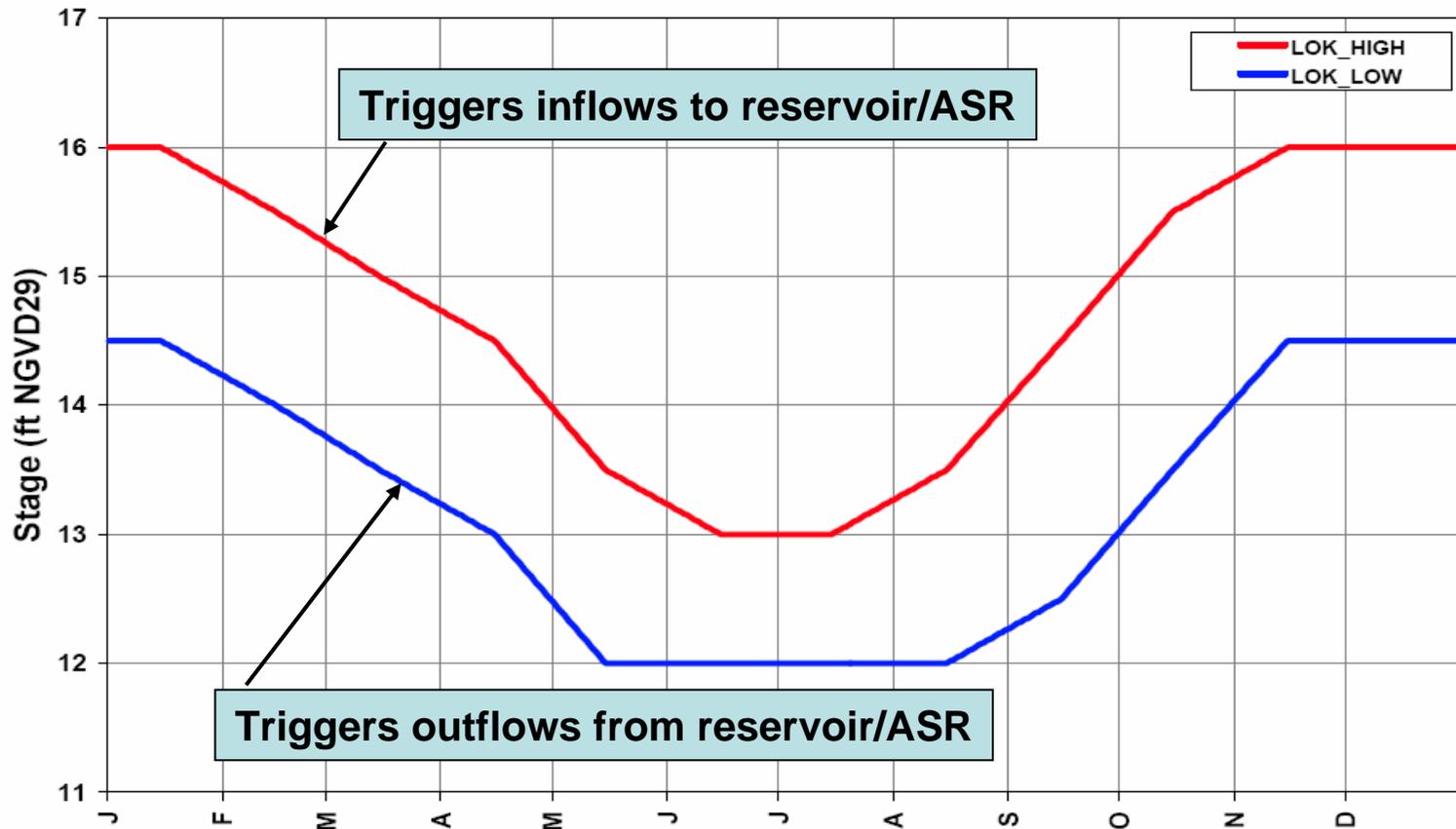


Magnitude of Storage in Alternatives 1, 2, 3 and 4

- **Alternative 1- ~265,000 ac ft- surface storage**
- **Alternative 2- ~1,300,000 ac ft- surface storage**
- **Alternative 3- ~ 330,000 ac ft- surface storage**
- **Alternative 4- ~ 900,000 ac ft- surface storage**

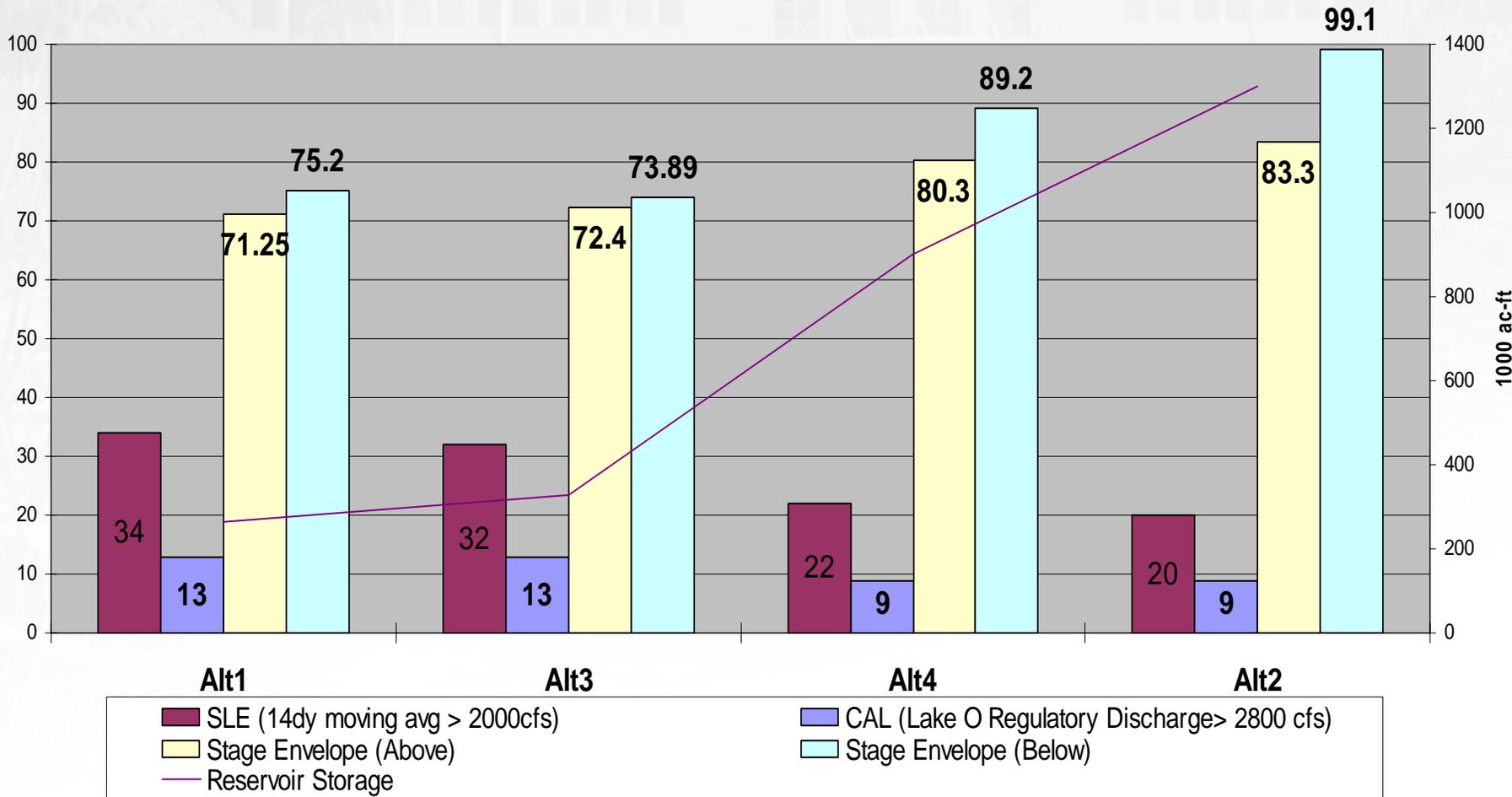
Regional Trigger For Inflows/Outflows Through Reservoir and ASR Management Measures

Stage Envelope for Lake Okeechobee

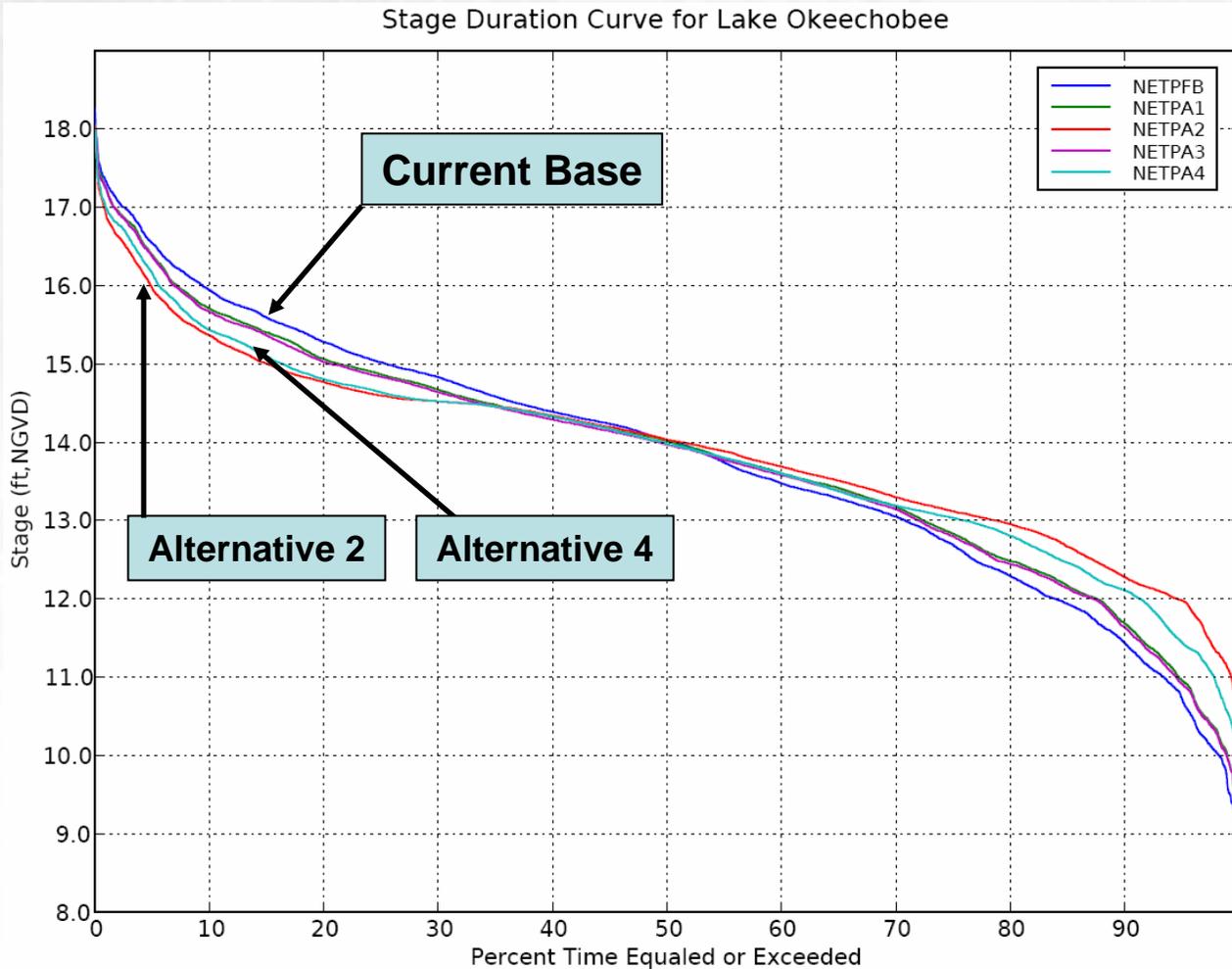


Water Quantity Results

Stage Envelope and Salinity Envelope



Stage Duration Curve for Lake Okeechobee





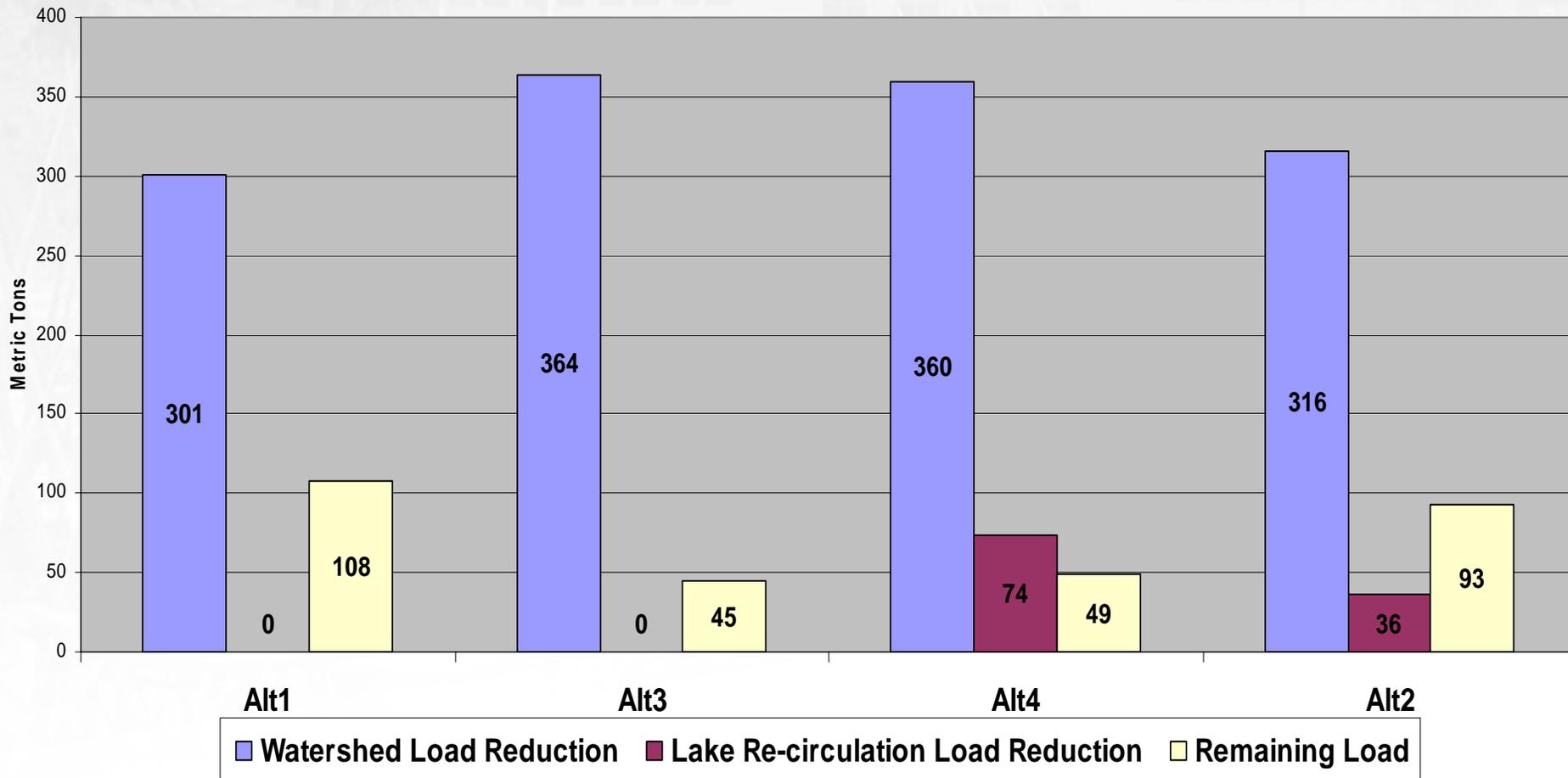
Alternatives 1 - 4 Water Quality Analysis

Water Quality- Defining the Magnitude of the Problem

- **For the period from 1991-2005**
 - **Average annual phosphorus loading= 514 metric tons**
 - **Average annual phosphorus concentration= 163 ppb**
- **Phosphorus TMDL for Lake Okeechobee**
 - **140 metric tons 5-year rolling average**
 - **35 metric tons attributed to atmospheric deposition**
 - **105 metric tons allowable from all surface water inflows**

Phosphorus Results Summary

Load Reduction Per Alternative



Topics to be included in report

- **Background and Summary of Previous Studies and Ongoing Projects**
- **Review Water Quality of Basins flowing into Lake Okeechobee**
- **Water Budget Analysis**
- **Formulation of Alternatives**
- **Alternative Evaluation, Comparison, and Description of Recommended Plan**
- **Recommended Projects and Actions**
- **Plan Refinement and Revision**

Technical Plan for Phase II of the Lake Okeechobee Watershed Construction Project

Schedule

- | | | |
|------------------------------------|--------------|------|
| ■ Draft Plan for public review | Late October | 2007 |
| ■ Review comments and revise draft | Nov-Dec | 2007 |
| ■ Final Plan to Governing Board | January | 2008 |
| ■ Submit Plan to Legislature | February 1 | 2008 |

Rivers Watershed Protection Plan Process

- **Project managers for District**
 - **Janet Starnes- Caloosahatchee River Watershed Protection Plan**
 - **Mike Voich- St. Lucie River Watershed Protection Plan**
- **Expanding Interagency Group to help coordinate planning**
- **Identifying the District team and developing work plan**
- **Formally kick-off in October**

<https://my.sfwmd.gov/northerneverglades>



Water

Protecting the Northern
Everglades
& Estuaries

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Northern Everglades

Underscoring the state's commitment to Greater Everglades Ecosystem restoration, the Florida Legislature in 2007 expanded the Lake Okeechobee Protection Act to strengthen protection for the Northern Everglades by restoring and preserving the Lake Okeechobee watershed and the Caloosahatchee and St. Lucie estuaries.

For a calendar of [Public Meetings](#) intended to involve and inform all of the interested public and stakeholders in this region, click the tab at the top of this page.

General Information

- » [Northern Everglades Legislation](#) [PDF]
- » [Just the Facts](#) [1 page PDF]
- » [Northern Everglades Presentation](#) [5.6 mb PPT]
- » [Everglades Ecosystem Map](#) [PDF]
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Everglades
Ecosystem



Questions